CURRENT LITERATURE.

BOOK REVIEWS.

The pruning-book.[1]

THIS book, the latest of the "Gardencraft Series," like all of Professor Bailey's works, deals with the subject in hand from a scientific standpoint, is systematic in arrangement, and so practical in all its suggestions that the average fruit-grower cannot fail to derive much valuable information from a perusal of its pages.

The book is divided into two parts. Part I treats of the "Fundamentals," and Part II the "Incidentals."

In the first part the philosophy and principles of pruning are discussed at length, and in the arguments brought forth it is made very evident to the most casual observer that the author is a firm believer in the theory of evolution as affecting plants, as well as animals. Consequently many of the reasons advanced for certain statements are comparatively new to us, because no American writer has ever taken so advanced a position on this subject as Professor Bailey has done; not so marked perhaps in this as in *The Survival of the Unlike*, which makes a good companion to the present volume.

A very common opinion held by practical horticulturists of the present day is that pruning exhausts the vitality of plants to a greater or less degree, according to the severity of the operation. In discussing this question the author maintains that no injury is done to the plant when the pruning is properly performed, and in support of this statement he presents arguments from three sources, viz., philosophy, plant physiology, and common experience. A tree, he says, is essentially a collection or colony of individual parts. Every branch is endeavoring to do what every other branch does — bear leaves, flowers, and seeds. Every branch competes with every other branch, and there are more rudiments of branches — that is, more buds — than there can be branches upon any tree. The limbs and organs of an animal are not competitors but copartners, each performing some function or office which another does not, and they all obtain at maturity a definite size and shape. But a branch never obtains its full size until it ceases to grow and thereby begins to die. Branches are competing individuals; hence there is a struggle

[1] BAILEY, L. H.: The pruning-book. A monograph of the pruning and training of plants as applied to American conditions. 12mo. pp. xii + 537. New York: The Macmillan Co. $1.50.

for existence among the branches of a tree, and some of them must perish; the destruction of these branches, therefore, must conduce to the betterment of those that remain.

Most fruit-growers advise early and continuous pruning as a means of saving time, and also to direct the energy of the tree which is put forth to produce these superfluous branches into those which are to remain. Professor Bailey believes that annual pruning is desirable, but he is equally convinced that it does not pay, either in cost of pruning or in good to the tree, to cut out all superfluous branches at each pruning. These twigs can often be left till three or four years old with advantage. Pruning in itself cannot be injurious so long as it does not interfere with the nutrition of the plant. Eight reasons are given why pruning should be done.

Part II treats more of the details of everyday practice in starting and shaping the heads of plants; and here the reader is urged to bear in mind the distinction between training or trimming the plant into some desired form, and pruning for definite results in the welfare of the plant and in fruit-bearing.

In discussing the subject of root-pruning the so-called Stringfellow system of stub-root pruning is compared with the ordinary method. Results obtained by the author at the Cornell Experiment Station proved that trees moderately root-pruned were clearly the best. Others, however, have had good results from the Stringfellow method, all of which shows that this method is to be considered a matter of local practice and not a matter of general principle.

The closing chapters of the book treat of training American grapes. The various methods are fully discussed and illustrated, thereby making this one of the most valuable features of the book, especially to the American grape-grower.—J. TROOP.

Fossil botany.

BOTANISTS and geologists both are bound to welcome Professor Seward's work on fossil plants, the first volume of which has recently appeared.[2] This book forms one of the familiar Cambridge "Natural Science Manuals," and is rather more extensive than the others. It is surely safe to say that no general work on paleobotany had yet appeared in English that is satisfactory to both botanists and geologists, and very few that are satisfactory to either. Thus it is a pleasure to read in the preface that this book is intended for both botanists and geologists, and hence has to be adapted to both non-geologists and non-botanists, since it is unfortunately true that neither class as a

[2] SEWARD, A. C.: Fossil plants for students of botany and geology. Vol. I. pp. 450, with illustrations. Cambridge: University Press. 1898.